

AMENDMENTS TO THE CLAIMS

1. (Withdrawn) A microfluidic device, comprising
a substrate;
a plurality of resin layers formed on the substrate; and
a three-dimensional fluid circuit formed in the plurality of the resin layers.

2. (Currently Amended) A method of manufacturing a microfluidic device for use in μ -Tas, comprising the steps of:
 - (a) providing a re-usable substrate;
 - (b) [[a]] laminating a first resin film on [[a]] the substrate, and forming a groove in the first resin film by a laser ablation method, said groove having a width of 20 to 100 μ m and a predetermined circuit pattern which functions as a μ -Tas fluid flow path ~~by removing a part of the resin film layer by laser processing;~~
 - (c) [[b]] laminating a ~~subsequent~~ second resin film on the ~~overall surface of said first~~ resin film layer ~~having been processed in step (b)~~, and forming a ~~groove in the subsequent resin film layer by laser processing and/or forming, by laser processing of the subsequent resin film layer,~~ a throughhole by laser ablation, which accurately penetrates the patterned ~~[[to the]]~~ groove formed in step (b) ~~said resin film layer having been processed;~~
 - (d) [[c]] ~~repeating the step (b)~~ laminating a third resin film on the second resin film processed in step (c), and forming a second groove in a predetermined circuit pattern so as to be accurately connected to the throughhole formed in step (c), by a laser ablation method; and

(e) ~~[[(d)]]~~ forming a three dimensional fluid circuit by finally laminating the third resin film and forming inlets and an outlet by laminating a resin film a laser ablation method;

wherein the resin film layers are to be washed away with a solvent after analysis, and the substrate is to be reused to regenerate the microfluidic device in accordance with steps (b) to (e) for a subsequent μ -Tas; and

wherein the fluid circuit formed in the resin films achieves three-dimensional fluid mixing.

3. (Cancelled)

4. (Cancelled)

5. (Currently Amended) The method of manufacturing the microfluidic device according to claim 2, wherein the thickness of ~~[[the]]~~ each resin film layer is 10 to 1000 μm .

6. (Currently Amended) The method of manufacturing the microfluidic device according to claim 2, wherein the depth of ~~[[the]]~~ each groove is 20 to 30 μm .

7. (Cancelled)

8. (New) The method of manufacturing the microfluidic device according to claim 2, further comprising a step of: repeating steps (c) and (d), thereby connecting the grooves formed in the different steps via the throughhole.